Q: A and B complete a piece of work in 20 days & 30 days respectively. In how many days will they complete the work together?

A: To find the number of days it will take A and B to complete the work together, we can use the concept of unit rate of work. The unit rate of work is the amount of work done per day by a person. If we know the unit rate of work for each person, we can find the combined unit rate of work for both of them and use that to find the total number of days it will take to complete the work.

Let's assume that the total amount of work to be done is W.

The unit rate of work for A is W/20 days.
The unit rate of work for B is W/30 days.

The combined unit rate of work for both A and B is (W/20) + (W/30) = (5W/60) = W/12 days.

So, it will take A and B 12 days to complete the work together.

This method works because we are finding the combined rate at which both A and B can do the work, which is equal to the total work divided by the total time taken. By adding the individual rates, we are effectively finding the combined rate of work, and dividing the total work by the combined rate gives us the total time taken to complete the work.

Q: P, Q, & R complete a piece of work in 12 days, 15 days, & 20 days respectively. In how many days they complete the work together?

A: To find the number of days it will take P, Q, and R to complete the work together, we can use the concept of unit rate of work. The unit rate of work is the amount of work done per day by a person. If we know the unit rate of work for each person, we can find the combined unit rate of work for all three of them and use that to find the total number of days it will take to complete the work.

Let's assume that the total amount of work to be done is W.

The unit rate of work for P is W/12 days.
The unit rate of work for Q is W/15 days.
The unit rate of work for R is W/20 days.

The combined unit rate of work for all three of them is (W/12) + (W/15) + (W/20) = (12W/60) = W/5 days.

So, it will take P, Q, and R 12 days to complete the work together.

This method works because we are finding the combined rate at which P, Q, and R can do the work, which is equal to the total work divided by the total time taken. By adding the individual rates, we are effectively finding the combined rate of work, and dividing the total work by the combined rate gives us the total time taken to complete the work.

Q: Ajay is 2 times more efficient than Sahil. If Ajay completed the whole work in 30 days, in how many days:

- Will Sahil complete the work?
- Will Ajay & Sahil complete the work together?

A: Let's assume that the total amount of work to be done is W.

If Ajay completed the work in 30 days, then his unit rate of work is W/30.
Since Ajay is 2 times more efficient than Sahil, Sahil's unit rate of work is W/30 * 1/2 = W/60.

To find the time it will take Sahil to complete the work, we can divide the total work by Sahil's unit rate of work, which gives us W/ (W/60) = 60 days.

To find the time it will take Ajay and Sahil to complete the work together, we can add their unit rates of work, which gives us (W/30) + (W/60) = (3W/60) = W/20.

So, it will take Ajay and Sahil 20 days to complete the work together.

This method works because we are finding the combined rate at which Ajay and Sahil can do the work, which is equal to the total work divided by the total time taken. By adding the individual rates, we are effectively finding the combined rate of work, and dividing the total work by the combined rate gives us the total time taken to complete the work.

Q: Vinayak & Shekhar complete a piece of work in a certain number of days. When they work together, they complete the work in 8 days, assuming that Vinayak is 4 times as efficient as Shekhar. In how many days will Shekhar complete the work alone?

A: Let's assume that the total amount of work to be done is W.

Let's say that Shekhar's rate of work is x. Then, Vinayak's rate of work is 4x, since he is 4 times as efficient as Shekhar.

When they work together, the combined rate of work is x + 4x = 5x.

We know that when they work together, they can complete the work in 8 days, so the combined rate of work is W/8.

Equating the two expressions for the combined rate of work, we have W/8 = 5x.

Solving for x, we get x = W/40.

So, Shekhar's rate of work is W/40, and it will take him 40 days to complete the work alone.

This method works because we are finding the individual rate at which Shekhar and Vinayak can do the work, and then using that information to find the combined rate of work when they work together. By knowing the combined rate of work, we can find the time it will take to complete the work, and then use that information to find Shekhar's rate of work and the time it will take him to complete the work alone.

- 20 men or 24 women can complete a work in 12 days. In how many days, 30 men & 6 women complete the same work?

- 10 men can complete a work in 12 days. The same work is completed by 10 women in 6 days. In how many days, 10 men & 10 women together complete the same work?

- A & B complete a piece of work in 20 days & 30 days respectively. A starts the work on the next day B starts the work. In how many days they alternately complete the work?

- P & Q complete a piece of work in 15 days & 20 days respectively. P starts the work on the next day Q starts the work. In how many days they complete the work alternately?

- X & Y complete a piece of work in 10 days & 15 days respectively. In how many days they complete the work alternately:
    - If X starts the work first?
    - If Y starts the work first?

- 7 spiders make 7 webs in 7 days. 1 spider makes 1 web in how many days?

- 20 men complete a piece of work in 30 days & complete 70 chairs. In how many days, 40 men complete 140 chairs?

- A contractor completes a work in 60 days. 50 men start the work. After 40 days, the contractor finds that only 50% of the work is completed. How many extra men must he employ to complete the work on time?

- A contractor completes a work in 100 days. 50 men start the work. After 60 days, he finds that only 40% of the work is completed. How many extra men does he need to complete the work on time?

- In a container, there is 80% water. If we remove 6 liters of water, then the container remains 65% full. Determine the container's capacity.

- 2 taps A & B fill a tank in 20 hours & 30 hours respectively. At what time do they fill the tank together?

- 2 taps X & Y fill a tank in 20 hours & 60 hours respectively. At what time do they fill the tank together?

- 2 taps P & Q fill & empty the tank in 20 hours & 30 hours respectively. At what time do they fill the tank together?

- 2 pipes A & B fill & empty the tank in 30 hours & 50 hours respectively. In what time the tank will be filled?

- 2 pipes X & Y fill & empty the tank in 20 hours & 30 hours alternately. At what time do they fill the tank together?

- Any item is bought at ₹1500 & sold at 20% profit. Find the S.P.

- In selling any item at ₹2700, the loss is 10%. Find out its C.P.

- For any item sold at ₹1800, the loss is 25%. For 20% profit, what would be its S.P.?

- A watch is sold at ₹770 for 30% loss. For how much should it be sold in order to gain 20%?

- If the C.P. of 15 items is equal to S.P. of 20 items, then find its loss/profit %age.

- After selling 25 items, the profit is equal to the S.P. of 5 items. Find the profit %age.

- A person bought 20 tables in ₹1200 & sold all of them. The profit is equal to the S.P. of the 4 tables. Find S.P. of each table.

- After selling X items, profit/loss is equal to the C.P. of Y items. Then the profit/loss %age is how much?

- A shopkeeper promises to sell his items at C.P. But the items weight 100gm per 1kg. Find his profit %age.

- A shopkeeper sells his his items at the C.P., but he earns 12.5% profit by weighting some less amount. Find the loss amount per kg.

- The M.P. of an item is ₹1500. What will be the S.P. after a discount of 20%?

- Find the overall discount of successive discounts of 20%, 10%, & 5%.

- M.P. of any item is ₹1500. 2 successive discounts are applied on it. Any buyer is getting it at ₹1080. If the 1st discount is 20%, then find the 2nd discount %age.

- An article is marked 50% above the C.P. & it's sold at 40% discount. Find the profit/loss%.

- A shopkeeper buys any item & marked it 60% above the C.P. 1/4th of it he sells at M.P., 1/4th of it he sells at 10% discount, & remaining he sells at 20% discount. Find his profit/loss%.

- A sells any item to B at 40% loss. B sells to C at 20% profit. C sells to D at 25% profit. If D has bought it at ₹2160, find the price at which A has bought the item.

- A shopkeeper allows 10% discount on his item, still he gains 8% profit. Find the ratio of C.P. to M.P.

- A shopkeeper bought 3 apples at ₹1. He bought another 4 apples at ₹1. He combines them & sells 3 apples at ₹1. Find his profit/loss%.

- A car covers a certain distance at a speed of 48 kmph in 14 hours. How much time will it take to cover the same distance at the speed of 84 kmph?

- A boy goes to his college with 4/5th of the original speed & reaches the office 5 minutes late. Find the actual time.

- A car goes with 7/11th of original speed & takes 22 hours. If it goes with original speed, how many hours will it take?

- What will be the total amount of ₹6000 after 4 years at 5% p.a.?

- The Simple Interest on any amount is 4/9th of that amount. If the rate of interest & time are same, then find the rate of interest & time.

- The Simple Interest on any amount in 5 years is 2/5th of that amount. Find the rate of interest.

- Find the average of 126, 140, 154, 170, & 160.

- Find the average of 231, 297, 255, 263, & 289.

- Find the average of 763, 724, 746, 770, & 787.

- Find the average of 1st 10 consecutive numbers.

- Find the average of 1st 31 consecutive numbers.

- Find the average of 1st 10 consecutive even numbers.

Average of consecutive even numbers = No. of terms + 1

- Find the average of 1st 21 consecutive even numbers.

- Find the average of 1st 10 consecutive odd numbers.

Average of consecutive odd numbers = No. of terms

- Find the average of 10, 12, 14, ..., 32.

- In a class, the average age of 17 students is 20. When the age of the teacher is included, the average becomes 22 years. Find the age of the teacher.

- In a class, the average age of 14 students is 10 years. When a student leaves the class, the average becomes 11 years. Find the age of the student who left the class.

- In a class, the average age of 20 students is 21.5. When 2 students left the room, the average became 30. Find the average age of those 2 students who left the class.